

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
 Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of )

)  
 Amendment of Section 2.106 of the  
 Commission's Rules to Allocate  
 Spectrum at 2 GHz for Use  
 by the Mobile-Satellite Service )

ET Docket No. 95-18

To: The Commission

**COMMENTS OF THE ASSOCIATION OF AMERICAN RAILROADS**

The Association of American Railroads ("AAR"), by its undersigned counsel, pursuant to section 1.415 of the rules of the Federal Communications Commission ("Commission"),<sup>1/</sup> hereby submits its comments in response to the above-captioned Third Notice of Proposed Rule Making<sup>2/</sup> concerning the relocation of terrestrial fixed service ("FS") microwave licensees in the 2110-2150 MHz and 2165-2200 MHz bands.

AAR is a voluntary, non-profit organization composed of Class I member railroad companies operating in the United States, Canada and Mexico. AAR is the joint representative and agent of these railroads in connection with federal regulatory matters of common concern to the industry as a whole, including matters pertaining to regulation of communications. In addition, AAR functions as the frequency coordinator with respect to railroad operation of land mobile and other radio-based services.

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1/ See 47 C.F.R. § 1.415.

2/ ET Docket No. 95-18, *Third Notice of Proposed Rule Making*, FCC 98-309(released November 25, 1998)("Notice").

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## **I. SUMMARY OF RAILROAD INDUSTRY POSITION**

AAR recognizes that the Commission is obligated to manage the scarce radio spectrum in a way that permits the introduction of new services.<sup>3/</sup> However, the Commission has a concomitant obligation to protect the vital spectrum needs of incumbent users of the spectrum.

AAR believes the Commission can satisfy this obligation in the context of the current proceeding by affirming the following two basic principles: First, because effective sharing between MSS licensees and incumbent FS system operators is highly impracticable, FS systems should be relocated. Second, an efficient and equitable reallocation of spectrum requires that incumbent licensees receive relocation reimbursement from later-entrant spectrum users irrespective of when their relocation takes place.

## **II. NATURE OF RAILROADS' INTEREST**

As the Commission is aware, the railroad industry makes extensive use of fixed microwave links for the operation and control of train movements.<sup>4/</sup> The North American railroad industry deploys and depends upon a comprehensive and

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<sup>3/</sup> The Balanced Budget Act of 1997 mandates the reallocation of 2110-2150 MHz for assignment by competitive bidding (See Balanced Budget Act, § 3002). The reallocation of 2165-2200 MHz to the MSS was effected earlier in this proceeding (*First Report and Order*, 12 FCC Rcd 7388 (1997)).

<sup>4/</sup> See e.g., Comments of AAR in RM-9405 (Establishment of a Public Service Pool), filed December 23, 1998; Comments of AAR in IB Docket 98-172 (18 GHz Band), filed November 19, 1998; Railroads' Comments in Response to SkyBridge Application (11 GHz Band), filed December 15, 1997; Comments of AAR in ET Docket No. 95-18, RM-7927, filed March 5, 1995.

sophisticated network of point-to-point fixed service (FS) microwave systems used to carry voice and data traffic which is integral to the minute-to-minute management and control of train movements throughout the rail network.<sup>5/</sup> These FS links are used to interconnect the trackside radio facilities (both mobile and fixed) with the centralized dispatching center in each railroad's operating region. For example, a locomotive traveling on Union Pacific's right-of-way in Nevada is in contact, via mobile radio and FS links, with the Union Pacific centralized dispatch and control center located hundreds of miles away in Omaha, Nebraska; similarly, Jacksonville, Florida is the center of operations for trains on the CSX network, which covers the Southeast, Mid-central and Middle Atlantic regions of the nation.

FS microwave circuits are integral links in this nationwide railroad communications system. These links carry communications to advise of dangerous conditions and, if necessary, bring railroad operations to a halt to prevent unsafe conditions. Radio communications between trains and central dispatchers are essential to protect railroad employees and the general public. Only radio can provide immediate information on the location, direction and speed of hundreds of trains operating at the same time on each major railroad in the country. This information is indispensable to railroad safety. In this regard, a 1994 "Report to Congress" by the Federal Railroad Administration reviewed in detail the various types of railroad communications systems including those used for train movement and control, switching operations, defect

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<sup>5/</sup> See AAR's Comments in ET Docket No. 95-18, filed May 5, 1995; AAR's Reply Comments filed June 21, 1995; and AAR's Response to Comsat's Supplemental Comments filed May 17, 1996.

detection and emergency response and concluded that radio communications were an integral part of railroad safety planning and execution.<sup>6/</sup>

These operational and safety uses are absolutely critical to the safe operation of railroads and cannot be sacrificed in favor of other spectrum users.

### III. **DISCUSSION**

#### A. **Sharing Between MSS and Incumbent FS is Infeasible.**

In the *First Report and Order* in this proceeding, the Commission decided that MSS systems would not be permitted to begin operations until the spectrum allocated for MSS was cleared of all FSS licensees who would receive harmful interference from MSS downlink transmissions.<sup>7/</sup> The Commission also states that MSS operators would not be required to relocate FSS systems with whom the MSS could successfully share the spectrum.<sup>8/</sup> In the *Notice*, the Commission affirmed its decision to absolve MSS from relocation obligations when sharing between MSS and FSS was shown to be possible, and expressed its intention to adopt the MSS/FS interference standards being developed by the MSS and FS industries under the auspices of the Telecommunications Industry Association.<sup>9/</sup> From AAR's perspective, the development

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6/ Railroad Communications and Train Control, Federal Railroad Administration, Department of Transportation Report to Congress, July 1994 at 22-34 (hereafter FRA Report).

7/ See *First Report and Order*, 12 FCC Rcd 7388 at ¶ 42.

8/ *Id.*

9/ See *Notice* at ¶ 49.

of an effective sharing arrangement between MSS and FS is highly unlikely. In fact, the decision to consider sharing between FS systems and ubiquitous satellite earth stations stands in direct conflict with decisions the Commission has made recently in three other proceedings.

First, in its recent *Notice of Proposed Rulemaking* to redesignate the 18 GHz band to permit the blanket licensing of ubiquitously deployed satellite earth stations, the Commission made the preliminary determination that FS stations and ubiquitously deployed satellite earth stations cannot operate co-frequency without harmful interference.<sup>10/</sup> In response to this *Notice*, the Commission received numerous comments from both satellite and FS interests concurring in the Commission's determination and supporting separate allocations for the FS and satellite services.<sup>11/</sup>

Second, in the pending *Notice of Proposed Rulemaking* regarding co-frequency operations between FS and satellite services in the 11-12 GHz band, the Commission has avoided allocating ubiquitous satellite earth stations (i.e. subscriber terminals) in the bands occupied by incumbent FS systems.<sup>12/</sup> In that *Notice*, satellite access to FS frequency allocations in the 11-12 GHz band would be restricted to a limited number of

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<sup>10/</sup> See IB Docket No. 98-172, *Notice of Proposed Rulemaking*, (FCC 98-235), (rel. September 18, 1998).

<sup>11/</sup> See Comments in IB Docket No. 98-172 (filed November 19, 1998), e.g. Comments of Hughes Electronics, Inc. at 2; Comments of KaStar Satellite Communications Corp. at 7; Comments of Teledesic LLC at 15; Comments of WinStar Communications, Inc. at 7; Comments of Telecommunications Industry Association at 11.

<sup>12/</sup> See ET Docket No. 98-206, *Notice of Proposed Rulemaking*, (FCC 98-310), (released November 24, 1998) ("11 GHz Proceeding").

“gateway” stations that must be coordinated to avoid interference to incumbent FS systems.<sup>13/</sup>

Finally and most recently, the Commission, in its *Report and Order* in the V-Band proceeding (above 36 GHz), confirmed its determination that sharing the same spectrum between ubiquitous satellite systems and FS systems is not feasible.<sup>14/</sup> In this proceeding, the Commission made its findings quite clear: “[S]haring is not possible at this time without significant technical constraints on both satellite and terrestrial system operations . . . We conclude that designating separate spectrum for FSS and wireless services will provide the various proposed systems the best opportunity to operate free of interference.”<sup>15/</sup>

In the last six months, in three different proceedings addressing three different spectrum bands, the Commission has concluded that sharing between ubiquitous satellite user terminals and terrestrial wireless systems is not feasible. Importantly, the MSS transceivers that will be deployed in the 2 GHz band will be comparable in their ubiquity to the FSS subscriber terminals that are the subject of concern in the other three proceedings. Based on this experience, the Commission should find that sharing is equally infeasible in the 2 GHz band.

The MSS have been allocated 2165-2200 MHz for downlink use. In order to protect FS systems operating in this band from harmful interference, MSS systems will

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13/ *Id* at ¶¶ 17-23.

14/ See IB Docket No 97-95, *Report and Order*, (FCC 98-336), (released December 23, 1998)(“V-Band Order”).

15/ *Id* at ¶ 18.

have to accept downlink power restrictions in the form of “hard limits” on the power flux density (“PFD”) of MSS transmissions. However, setting PFD limits at a level that is adequate for the protection of FS systems will adversely impact the capacity of MSS systems. This reality was clearly stated at WRC-95 where the feasibility of sharing MSS downlink transmissions with FS rated “moderate” to “poor.” The CPM Report to WRC-95 found that the technical constraints needed to prevent interference to FS would result in limited useful MSS capacity.<sup>16/</sup> Consequently, if the Commission were to encourage sharing, MSS operators would have an incentive to promote the least restrictive PFD levels possible, which would increase the risk of harmful interference to FS systems.

In addition to the danger that FS systems would receive harmful interference from MSS downlink transmissions in a shared spectrum environment, sharing in the 2165-2200 MHz band is severely limited by the interference that FS will cause MSS mobile receivers. Even though it may be theoretically possible for MSS PFD limits to be set at a level that would prevent harmful interference to FS systems, it will not be possible to protect MSS mobile receivers from FS interference.

Accordingly, rather than rely on highly impracticable and ineffective interference spectrum sharing protocols, the Commission should encourage an efficient and equitable process for the relocation of incumbent FS systems in the 2165-2200 MHz band. This can be accomplished by requiring MSS operators to provide relocated FS system operators with comparable facilities that match the overall throughput capacity

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<sup>16/</sup> See CPM Report to WRC-95, Chapter 2, Section I, Part A.2.

and system reliability of existing facilities, pursuant to the Commission's existing relocation procedures.<sup>17/</sup> However, as discussed more fully below, the Commission should encourage an expedited relocation negotiation process by eliminating any "sunsetting" of relocation reimbursement obligations.

**B. Relocation Reimbursement for Incumbent FS Systems Must be Affirmed Without any "Sunset" of Reimbursement Obligations.**

The Commission has long recognized that when incumbent licensees are relocated from their existing spectrum assignments to accommodate new systems, the new entrant must reimburse the incumbent operator for its relocation expenses.<sup>18/</sup> These relocation expenses "include all engineering, equipment, site and FCC fees, as well as any reasonable, additional costs that the relocated fixed microwave licensee may incur as a result of operation in a different fixed microwave band."<sup>19/</sup> In fact, this policy was affirmed in this very proceeding when the Commission denied a Petition, filed by a coalition of Mobile Satellite Service ("MSS") providers, requesting exemption from the relocation compensation policies adopted in the *Emerging Technologies* proceeding.<sup>20/</sup>

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<sup>17/</sup> See 47 C.F.R. § 101.75.

<sup>18/</sup> See, *Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies, First Report and Order and Third Notice of Proposed Rule Making*, 7 FCC Rcd 6886, 6890 (1992), *Second Report and Order*, 8 FCC Rcd 6495 (1993); *Third Report and Order and Memorandum Opinion and Order*, 8 FCC Rcd 6589 (1993) ("*Emerging Technologies Proceeding*").

<sup>19/</sup> *Id.*, *First Report and Order* at ¶ 24.

<sup>20/</sup> See ET Docket No. 95-18, *Memorandum Opinion and Order*, (FCC 98-309), (rel. November 25, 1998).



While AAR applauds the Commission's affirmation of its existing relocation compensation rules, AAR believes it necessary to eliminate the "sunsetting" of these relocation responsibilities.

AAR has consistently opposed the "sunsetting" of relocation reimbursement obligations.<sup>21/</sup> The establishment of a "sunset" date upon which relocation reimbursement rights expire drastically undermines the Commission's relocation compensation policies. Having made the determination that new service providers who wish to assume the spectrum rights of incumbent system operators must compensate these incumbents for the costs of their relocation, the Commission should ensure that this principle is followed irrespective of when the relocation takes place.<sup>22/</sup> Any other outcome would fundamentally alter the balance of competing interests in favor of new services and against incumbent operators, by allowing the new entrants merely to wait out the expiration of an arbitrary "sunset" period so they can thereafter gain unfettered access to spectrum without any reimbursement obligation. In short, equity demands that the cost of a forced relocation be assumed by the party demanding the relocation irrespective of when the relocation takes place.

#### **IV. Conclusion**

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21/ See e.g. Comments of AAR in IB Docket 98-172 (18 GHz Band), filed November 19, 1998; AAR Comments in WT Docket 95-157.

22/ Given the infeasibility of sharing between MSS and FS, as discussed above, and the immediate nationwide coverage potential of MSS as soon as the system becomes operational, it may be advisable for the Commission to adopt for FS relocation the same kind of nationwide simultaneous "retuning" on a date certain as was proposed for the Broadcast Auxiliary Service ("BAS"). See *Third Notice of proposed Rulemaking* at ¶ 39.

The reallocation of the 2 GHz band can be a success for all parties involved, as long as it is conducted in an equitable and transparent manner. AAR urges the Commission to affirmatively reject the proposition that FS and MSS can effectively share the 2 GHz band. Instead the Commission should promote an efficient and equitable relocation of incumbent FS systems that ensures that relocated FS incumbents receive just compensation in accordance with the Commission's existing relocation policies irrespective of when relocation takes place.

Respectfully submitted,

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## Certificate of Service

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